

# HELMINTHOLOGICAL ABSTRACTS

*incorporating*  
BIBLIOGRAPHY OF HELMINTHOLOGY  
For the Year 1942.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY  
(HELMINTHOLOGY)

Winches Farm Drive, Hatfield Road,  
St. Albans, England.

Digitized by the Internet Archive  
in 2024

# HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1942.

Vol. XI, Part 3.

## 89—American Journal of Hygiene.

- a. SCOTT, J. A., 1942.—“The epidemiology of schistosomiasis in Venezuela.” 35 (3), 337–366.
- b. SHELDON, A. J. & GROOVER, jr., M. E., 1942.—“An experimental approach to the problem of acquired immunity in human hookworm (*Necator americanus*) infections.” 36 (2), 183–186.
- c. LARSH, jr., J. E., 1942.—“Transmission from mother to offspring of immunity against the mouse cestode, *Hymenolepis nana* var. *fraterna*.” 36 (2), 187–194.
- d. BRACKETT, S. & BECKMANN, A. J., 1942.—“The fate of some species of schistosome cercariae in chick embryos.” 36 (2), 216–223.

(89a) Schistosomiasis is one of the most important diseases in certain areas in the central part of the northern coastal range of Venezuela, to which it is restricted by the distribution of the vector *Australorbis glabratus*. This is favoured by sugar-cane irrigation in the broad flats of mountain valleys. About one quarter of the rural population is affected and totals about 30,000. The snail also occurs in Lake Valencia but here is of little importance. A reduction in the snail population is thought to be the only hopeful means of control. This can probably be effected by minor changes in irrigation systems and practice. R.T.L.

(89b) By incubating larvae of *Necator americanus* in the serum of uninfected and infected patients, Sheldon & Groover were able to demonstrate the presence of a precipitin in some cases. It was not obtained from the sera of patients known to be clean and of some known to have exceptionally heavy infections. It did occur with some patients, originally believed to be clean, but who were known to have been exposed to infection. The precipitin seemed not to have a detrimental effect on the larvae *in vitro* but it may have some effect on them *in vivo*. P.A.C.

(89c) Larsh has evidence which seems to show that young mice receive a substance protecting them against infection with *Hymenolepis nana* var. *fraterna* from infected mothers. It can be transferred both during the embryonic stage and in the milk. This protection was active for about 40 days after birth. Two substances seem to be involved. That transferred in the uterus is less potent than the one received during lactation and its action ceases about a week after weaning. P.A.C.

(89d) An attempt has been made to cultivate *Cercaria elvae*, *C. stagnicolae* and *C. physellae* in chick embryo, which has been shown to be a useful and non-specific medium for viruses and bacteria and has given successful results with *Trichinella*. It was found that embryos younger than 17 days lack some substance which stimulates the cercaria to penetrate, while older chick embryos are capable of producing a cercaricidal substance. A technique is described by means of which cercariae can be obtained fairly free from bacteria. P.A.C.

## 90—American Journal of Surgery.

- a. WARNER, B. W., 1942.—“Anorectal and colonic manifestations of *Schistosoma mansoni* infestation (intestinal Bilharzia). Case report.” 57 (1), 168–172.

## 91—American Journal of Tropical Medicine.

- a. NICKEL, H. S., 1942.—“Amebiasis and hookworm infection as found in approximately 50,000 fecal examinations in Mississippi.” 22 (3), 209–215.
- b. WILSON, P. W., 1942.—“Maturation of *Ascaris* ova in sea water; a possible factor in dissemination of ascariasis in American Samoa.” 22 (3), 305–307.



- c. MCCOY, O. R., 1942.—“The incubation period of trichinosis.” 22 (4), 313-317.
- d. HEADLEE, W. H., 1942.—“Intestinal parasite infections among in-patients of the Indiana University Medical Center Hospitals.” 22 (4), 341-350.
- e. HEADLEE, W. H. & CABLE, R. M., 1942.—“Intestinal parasitism among students of Berea College, Kentucky.” 22 (4), 351-360.

(91b) Wilson seeks to correlate the dissemination of faeces on beaches and the “dunking” of cooked food in fresh sea-water with the high incidence of *Ascaris* infections in coastal villages of Samoa. He suggests the possibility of *Ascaris* eggs being able to develop to the infective stage in the sea and records that *Ascaris* ova can develop into mature active larvae in aerated sea-water containing 2% formalin. He reports the recovery of live *Ascaris* and *Trichocephalus* ova from shallow pools in the coral at low tide. It is suggested that beach latrines are a contributory factor to the spread of infection, tables being given which tend to support this view. D.W.F.

(91c) McCoy has tabulated data on the incubation period of trichinosis from recent literature, and has added some recent information on an outbreak of the disease in Rochester, N.Y., in 1937. The incubation period varies considerably: it may be as short as 2 days or as long as 3 weeks. In the Rochester outbreak, clinical symptoms developed in less than 22 days in 98% of the cases. He suggests that the clinical course of the disease is not closely correlated with the life-cycle and that symptoms may therefore be due to the degree of toxæmia rather than to the migratory activities of the larvae. P.A.C.

(91d) Headlee has made helminthological examinations of patients at hospitals in Indiana, using faecal examinations and peri-anal scrapings. Helminth infections were light. *Enterobius* occurred in 6.9%, *Hymenolepis nana* in 0.4%, while *Ascaris* and *Trichuris* both occurred in 0.8% of the patients. There was a single case of hookworm infection. He also made protozoological examinations. He is of the opinion that the incidence and distribution of these parasites warrants more interest than is at present accorded to them. P.A.C.

(91e) Students in Kentucky were examined for protozoa and helminths. 7 species of protozoa were found and the following helminths: *Ascaris lumbricoides*, *Trichuris trichiura*, *Necator americanus*, *Strongyloides stercoralis*, *Enterobius vermicularis* and *Hymenolepis nana*. The incidence is highest among the children of 11 to 15 age groups and there is a tendency for the incidence to decrease with increasing age. This may be due in part to spontaneous loss, also to treatment and to education. It is probable that some re-infection takes place in the home in vacation. P.A.C.

## 92—Angewandte Botanik.

- a. EXT, W. & GOFFART, H., 1942.—“10 Jahre Kampf gegen den Kartoffelnematoden in der Provinz Schleswig-Holstein.” 24 (1/2), 1-16.
- b. KOTTHOFF, P., 1942.—“Die Resistenz von Roggensorten gegen *Anguillulina* (*Ditylenchus dipsaci* (Kühn)).” 24 (1/2), 79-99.

(92a) Ext & Goffart deal with measures which have been taken during the past 10 years to control the potato eelworm, *Heterodera rostochiensis*, in Schleswig-Holstein. They show that success has attended the enforcement of regulations for the prohibition of potato growing in fields and gardens heavily infested with the parasite, and the compulsory adoption of a 3-year rotation, including potatoes, on lightly infested soils. T.G.

(92b) Kotthoff conducted field experiments at two centres in Westphalia, where the stem eelworm affects rye, to test the resistance of a large number of rye varieties to attack from the parasite. The results are set out in tabular form showing percentage of affected plants and yield. Of the considerable number of varieties tested no additional ones were found to be resistant, but resistance was confirmed in the case of the Lower-Rhine varieties “Ottersumer” and “Rheinberger” and a “Pulder” rye. T.G.

## 93—Annales de Parasitologie Humaine et Comparée.

- a. CALLOT, J., 1942.—“Sur un nouveau cas de paraneoxénie.” 19 (1/3), 51-52.



- b. DESPORTES, C., 1942.—“*Forcipomyia velox* Winn. et *Sycorax silacea* Curtis, vecteurs d’*Icosiella neglecta* (Diesing) filaire commune de la grenouille verte.” 19 (1/3), 53–68.

(93a) Callot reports the presence of active *Giardia muris* in the gut of immature *Echinostoma revolutum* during attempts to infect white mice with the metacercariae from *Limnaea stagnalis*.

R.T.L.

(93b) Desportes has continued his investigations on the filarial worm, *Icosiella neglecta*, common in the green frog. There is no periodicity of the microfilariae in the peripheral blood nor is there any concentration of the embryos at the bite of the vector *Forcipomyia velox*. Larval development requires from 22 to 26 or more days. Another efficient intermediary is *Sycorax silacea*.

R.T.L.

#### 94—Antiseptic. Madras.

- \*a. STRAIN, R. E., 1942.—“Guinea worm infestation.” 39, 29–30.

#### 95—Archiv für Hydrobiologie.

- a. ALLGÉN, C., 1942.—“Über einige Süßwasser-Nematoden aus der südlichen und südöstlichen Vättergegend.” 39 (1), 70–81.

(95a) Allgén lists the free-living, freshwater nematodes collected from three small lakes (Axamosjön, Tenhultsjön and Bunn) in the vicinity of Vätter Lake in southern Sweden. No new species are reported.

T.G.

#### 96—Archives of Ophthalmology.

- a. HOSFORD, G. N., STEWART, M. A. & SUGARMAN, E., 1942.—“Eye worm (*Thelazia californiensis*) infection in man.” 27 (6), 1165–1170.

#### 97—Archives of Surgery.

- a. TAIANA, J. A. & STARACE, C. J., 1942.—“Echinococcosis of the breast; report of a case.” 44 (4), 760–763.

#### 98—Bahia Medica.

- \*a. PONDÉ, E., 1942.—“Meningite linfocitaria de origem esquistosomótica.” 13, 1–6.

#### 99—Biochemical Journal.

- a. BALDWIN, E. & KING, H. K., 1942.—“Glycogen 8. The glycogen of *Ascaris lumbricoides* from the pig.” 36 (1/2), 37–42.

(99a) Baldwin & King have prepared a glycogen of chain length 12 to 13 units from *Ascaris lumbricoides*. The yield of crude polysaccharide was about 7%. Examination of the purified polysaccharide itself or the products prepared by acetylation, methylation and subsequent methanolysis gave no evidence indicating that it differed from any typical 12-unit glycogen. It is suggested that the bulk of the antigenic polysaccharide material obtained from *A. lumbricoides* by other workers was composed of glycogen. The significance of this finding in relation to immunological work is discussed.

W.P.R.

#### 100—Boletín del Instituto de Clínica Quirúrgica. Universidad de Buenos Aires.

- a. ITOIZ, O. A., 1942.—“Equinococosis primitiva experimental. Inmunidad y alergia en la hidatidosis; su expresión anatómica.” 18 (144), 49–109.

(100a) Itoiz has successfully infected sucking pigs with hydatid and has examined the liver changes at various periods up to 11 months and 10 days. Certain piglets were also given subcutaneous injections of filtered hydatid fluid, and in these animals the parasites tended to undergo necrotic calcification. The macroscopic and microscopic changes of all the animals are described in detail at various stages of development, and the effect of injections of hydatid fluid on the developing parasite is considered from the point of view of allergy.

P.A.C.

\* Titles so marked throughout this number have not been seen in the original.



## 101—British Journal of Radiology.

- a. GOSSE, A. H., 1942.—“A case of hydatid disease of the lungs.” 15 (171), 92-93.

## 102—Bulletin. Nevada Agricultural Experiment Station.

- a. DOTEN, S. B., 1942.—“The potato eelworm.” No. 158, 7 pp.

(102a) The root-knot nematode *Heterodera marioni* renders large areas of land in California and Nevada unfit for the cultivation of potatoes. The author briefly reviews possible methods of controlling the eelworm and concludes that the only one likely to reduce the damage is crop rotation. Following a corn crop, the planting of uninfected seed potatoes will probably result in a reasonably healthy crop of potatoes. M.T.F.

## 103—Canadian Journal of Comparative Medicine.

- a. SWALES, W. E., 1942.—“Phenothiazine: its role in the control of parasites of horses.” 6 (2), 50-54.  
 b. CAMERON, T. W. M., 1942.—“Report of the Committee on Parasitic Diseases of the United States Live Stock Sanitary Association.” 6 (5), 141-142.  
 c. SWALES, W. E., ALBRIGHT, W. D., FRASER, L. & MUIR, G. W., 1942.—“Photosensitization produced in pigs by phenothiazine.” 6 (6), 169-172.

(103a) Swales recommends the use of phenothiazine for clinical strongyloidosis in horses (2,000 e.p.g. and over), the drug being given as a powder mixed with oats and molasses at the rate of 1 oz. per 1,000 lb. body weight; a laxative should be given to constipated horses. A good time for treatment is in spring before pasturing. For bots, and for ascarids in colts, carbon disulphide is the better anthelmintic. B.G.P.

(103b) This report urges that the unfulfilled project of the International Veterinary Congress at Zurich in 1938, to map out the world distribution of those parasites of domesticated animals which are at least potentially pathogenic, should be started as soon as practicable for North America. R.T.L.

(103c) Although phenothiazine does not give the constantly high efficiency of oil of chenopodium against *Ascaris* in pigs, it is preferable because of its ease of administration and apparent lack of toxic effects. The number of reported cases of phenothiazine poisoning in pigs is few but the authors give data to show that photosensitization and other toxic reactions occur. They consequently recommend that pigs less than 70 days old should not be given phenothiazine and that protection from direct sunlight for at least three days should be provided for all pigs treated with this drug. R.T.L.

## 104—Canadian Journal of Research. Section B. Chemical Sciences.

- a. COLLIER, H. B. & ALLEN, D. E., 1942.—“Enzyme inhibition by derivatives of phenothiazine. II. Inhibition of cholinesterase.” 20 (9), 189-193.

(104a) Collier & Allen found that 50% inhibition of cholinesterase (estimated by the method of Stedman) was produced by eserine  $2.5 \times 10^{-8}$  M, methylene blue,  $1.2 \times 10^{-6}$  M, thiazine methyl-sulphonium perchlorate,  $1.6 \times 10^{-6}$  M, and phenothiazine,  $6.7 \times 10^{-5}$  M. Phenothiazine and the sulphonium derivative had no effect on other esterases (kidney phosphatase and serum lipase). The significance of these findings in relation to the nervous symptoms in pigs and the apparent curariform action on crabs produced by phenothiazine is briefly discussed. W.P.R.

## 105—Canadian Journal of Research. Section D. Zoological Sciences.

- a. COLLIER, H. B. & ALLEN, D. E., 1942.—“The haemolytic action of phenothiazine derivatives.” 20 (10), 283-290.

(105a) Collier & Allen report that though phenothiazine and thiazine S-methyl sulphonium perchlorate have no direct action on red cells, they accelerate the lysis of horse erythrocytes by saponin and lysocleithin *in vitro*. Potassium leucophenothiazine sulphate (both the synthetic



compound and that recovered from the urine of treated animals) have similar effects. Sheep red cells are more resistant to haemolysis and to its acceleration by these compounds than horse red cells. Lysis caused by sodium choleate is only slightly accelerated. The significance of these results in relation to the haemolytic anaemia found in some horses after treatment with phenothiazine is discussed.

W.P.R.

#### 106—Canadian Public Health Journal.

- a. KUITUNEN-EKBAUM, E., 1942.—“Diagnosis of enterobiasis. (Evaluation of recent devices).” 33 (4), 174-176.

(106a) For over 60 years it has been known that the examination of stools for *Enterobius ova* is not reliable owing to the female worms discharging ova only when outside the anus. Thus various anal swabs have been designed and used. As it is usually the mothers or nurses who do the swabbing first thing in the morning the swabs require to be easily transportable, safe to persons handling and efficient in picking up the threadworm eggs. The National Institute of Health, the Graham and Frosst swabs have been described, figured and evaluated and the NIH swab is considered to fulfil best the above requirements.

M.R.Y.

#### 107—Circular. Mississippi Agricultural Experiment Station.

- a. PINCKARD, J. A., 1942.—“Root-knot.” No. 104, 4 pp.

(107a) Pinckard shows the important part played by the root-knot eelworm, *Heterodera marioni*, in limiting the yields from home gardens in the southern states of U.S.A. The pest is especially serious on summer crops such as beans, cucumbers and tomatoes but does not cause such severe losses in spring and autumn crops when the soil temperature is lower. As control measures he suggests rotations, fallowing of infected soil and the use of resistant crops as well as various sanitation measures. Particulars are given of certain summer garden crops which are tolerant to the parasite including varieties of sweet potato, beans and black-eye peas as well as tolerant fruit stocks.

T.G.

#### 108—Comptes Rendus des Séances de la Société de Biologie.

- a. DÉVÉ, F., 1942.—“L'échinococcose rénale secondaire pylogénétique.” 136 (5/6), p. 290.

#### 109—Deutsche Medizinische Wochenschrift.

- a. BRODERSEN, H. & BUDING, A., 1942.—“Erfolgreiche Röntgenbestrahlung bei einem Fall von Lungenechinokokkus.” 68 (5), 118-119.  
 \*b. BRANDT, 1942.—“Muskelschmerzen bei Trichinose.” 68, p. 253.  
 c. SPAETH, H., 1942.—“Die Trichinose. Nach Beobachtungen an mehreren Gruppen-erkrankungen.” 68 (37), 912-916.

(109c) Spaeth gives a general account of trichinelliasis in man, based on his experiences in 2 outbreaks among soldiers in German-occupied countries. Special attention is paid to the cardiac disturbances which were a feature of the later stages of the illness.

A.E.F.

#### 110—Deutsche Militärarzt (Der).

- a. GAASE, A., 1942.—“Die Trichinoseforschung nach dem Schrifttum der letzten Jahre mit besonderer Berücksichtigung eigener Komplementbindungsergebnisse beim Menschen und in Tierversuchen.” 7 (7), 442-448.  
 b. REIMANN, H., 1942.—“Ekg bei Trichinose.” 7 (7), 448-454.

(110a) Gaase reviews recent literature on trichinosis in man and animals. He points out the prevalence of the disease in German-occupied countries (especially Poland) and strongly recommends the extension of German meat inspection regulations to these countries. Special attention is paid to *intra vitam* diagnosis by precipitin reaction and complement fixation. A.E.F.

(110b) By means of the electrocardiogram Reimann has examined the effect of trichinosis on the heart in 72 out of a series of 114 trichinosis cases in a military hospital. In 75% he found signs of toxic injury to the myocardium in the 5th week after infection. The condition



usually cleared up by the 8th week. He therefore recommends that patients should be ordered complete rest up to the 8th week, even when subjective symptoms have already disappeared.

A.E.F.

### 111—Deutsche Tierärztliche Wochenschrift.

- a. WETZEL, R., 1942.—“Ueber die Entwicklungsdauer der Palisadenwürmer im Körper des Pferdes und ihre praktische Auswertung.” 50 (43/44), 443-444.

(111a) By experimental infection of a 4-month-old foal, Wetzel has determined the prepatent period (interval between the ingestion of larvae and sexual maturity) of *Strongylus vulgaris* and *S. equinus* to be respectively 196 and 261 days. The prepatent period of *Trichonema* spp. is estimated to be from 6 to 12 weeks. Eggs found in the faeces of foals up to 6 weeks old have most probably been ingested and passed out unchanged: pre-natal infection is not considered possible. Applying the determination of the prepatent period to prophylaxis, Wetzel recommends three treatments: the first when animals are 3 to 4 months old, the second at 8 months and the third at 12 to 15 months.

A.E.F.

### 112—Deutsche Tropenmedizinische Zeitschrift.

- a. VOGEL, H., 1942.—“Über Entwicklung, Lebensdauer und Tod der Eier von *Bilharzia japonica* im Wirtsgewebe.” 46 (3), 57-69; (4), 81-91.  
 b. EICHHOLTZ, F. & ERHARDT, A., 1942.—“Wurmmittel. Der Nachweis ihrer Spezifität im chemotherapeutischen Versuch unter besonderer Berücksichtigung des Phenolabkömmlings 430 Kl (Knoll).” 46 (11), 275-284.  
 c. BRAUNE, J. F., 1942.—“Ueber die Verhütung der Bilharziose unter Feldzugsbedingungen, insbesondere ueber die Gewinnung von Zerkarienfreiem Wasch- und Badewasser.” 46 (16), 409-426.

(112a) The various stages of development shown by living and dead *Schistosoma japonicum* eggs removed from fresh intestinal tissue of experimentally infected animals are described. In mice, eggs do not appear in the female worms until the 25th day of infection; on the following day most of the females contain eggs. Oviposition begins on the 25th day in the liver and on the 27th day in the intestinal wall, but these eggs were unfertilized. Fertilized eggs first appeared on the 26th or 27th day. Mature miracidia begin to appear on the 36th and in large numbers on the following day. Development of the fertilized eggs to the miracidium takes 9 to 10 days. In experimentally infected rabbits the natural life-span of the eggs is only 3 weeks.

R.T.L.

(112b) Eichholtz & Erhardt have tested a number of anthelmintics, including two new drugs, “E 1750” and “430 Kl”, using cestodes, *Toxocara* and *Ancylostoma* in cats and *Passalurus* in rabbits. The new drugs were effective against the cat parasites, and “430 Kl” had some action on *Passalurus*.

W.P.R.

(112c) When 1 g. of citric or tartaric acid is added to 1 g. of p-toluolsulphonchloramide-sodium in 10 litres of water the cercariae of *Schistosoma mansoni* are killed within 15 minutes, with 2 g. of the acid the amount of the sodium salt can be reduced to 0.5 g. Sodium hypochlorite as “Caporite” is a white non-hygroscopic powder containing 70% to 75% of chlorine and will keep dry for several months without appreciable deterioration: it kills the cercariae in 10 minutes in a dilution of 1 g. in 100 to 200 litres of tap or river water, or in 15 minutes in a dilution of 1 g. in 200 to 500 litres of river water. These methods are only suitable for small quantities and not for natural collections of water. The intermediate hosts are not killed.

R.T.L.

### 113—Día Médico.

- \*a. FILLIPPI, J. DE, 1942.—“La operación en un solo tiempo del quiste hidático del pulmón libre de adherencias pleurales; el procedimiento del Prof. Ceballos.” 14, 111-112.  
 \*b. YAGÜE Y ESPINOSA, L., 1942.—“El hollín en el tratamiento de la oxiuriasis.” 14, 211-212.

### 114—Farm and Home Science. Utah State.

- \*a. KRULL, W. H., 1942.—“Liver fluke causes serious losses to sheep and cattle in the intermountain States.” 3 (1), p. 14.



## 115—Farming in South Africa.

- a. MÖNNIG, H. O., 1942.—“Warning against the worm-remedy ‘phenothiazine’.” 17 (197), 487-488.

(115a) Mönnig states that tests with phenothiazine at Onderstepoort yielded results less striking than those claimed elsewhere. The disadvantages of this drug (erratic anthelmintic results, toxic effects, large bulk of effective dose, and high cost) are outweighed by the advantages only in the treatment of strongyles in horses, and even here the anaemia often accompanying strongylosis is a contra-indication. B.G.P.

## 116—Gaceta Médica de México.

- \*a. TORRES ESTRADA, A., 1942.—“Posibilidad de observar con el oftalmoscopio las micro-filarias del vítreo en los pacientes afectados de oncocercosis.” 72, 98-106.

## 117—Guy's Hospital Reports.

- a. HURST, A. & ROBB-SMITH, A. H. T., 1942.—“Fatal tape-worm enteritis.” 91 (1), 58-60.

(117a) A fatal case of enteritis is described. In the absence of other obvious cause the authors attribute the symptoms and pathological changes in the small intestine to a living *Taenia saginata* recovered at post-mortem. R.T.L.

## 118—Hoppe-Seyler's Zeitschrift für Physiologische Chemie.

- a. EICHHOLTZ, F., 1942.—“Zur Chemotherapie der Eingeweidewürmer.” 274, 96-103.  
b. WAGNER, O., 1942.—“Fortschritte der Trichinoseforschung in epidemiologischer und diagnostischer Hinsicht.” 274, 116-128.

(118a) In testing drugs for anthelmintic properties, whether *in vitro* or *in vivo*, it is essential to obtain the optimal dispersion. Not every dispersal agent, however, is suitable, for some may affect the chemical composition of the drug and even result in its complete detoxication. As an example of the danger of drawing conclusions from *in vitro* experiments Eichholtz cites Lamson's work with alkylated resorcinol derivatives on isolated ascarids. It is shown that the optimum effect was obtained with alkyls with 5, 6 and 7 carbon atoms and that with 10 to 18 carbon atoms there was no apparent effect. Later *in vivo* experiments have shown, however, that hexylresorcinol is by no means the optimum of this series. Particularly effective is Tridecylresorcinol. Although this is practically ineffective *in vitro*, it has a higher therapeutic index than hexylresorcinol against ascarids and hookworms as well as a wider therapeutic range. Its preparation and packing are difficult and owing to its irritating effect on the buccal mucosa it has not yet acquired practical importance as an anthelmintic. R.T.L.

(118b) This review of trichinosis covers recent work on the life-history, bionomics, sources of infection and methods of distribution, immunobiological reactions, preparation of antigen, and Gaase's complement fixation reaction with *Trichinella* antigen. As the precipitin test gives a weak non-specific reaction when other diseases are present, the clearness of the complement fixation reaction is to be preferred. R.T.L.

## 119—Indian Journal of Veterinary Science and Animal Husbandry.

- a. ANANTARAMAN, M., 1942.—“The life-history of *Oesophagostomum radiatum*, the bovine nodular worm.” 12 (2), 87-132.  
b. MAHAJAN, M. R., 1942.—“Liver fluke and its control in Hyderabad State.” 12 (2), 133-149.  
c. NAIK, R. N., 1942.—“Experiment on the control of nasal granuloma.” 12 (2), 150-159.  
d. MUDALIAR, T. V. & MUDALIAR, S. V., 1942.—“Parasites and parasitosis of sheep.” 12 (2), 165-168.

(119a) Anantaraman has made a full and detailed study of the life-history of *Oesophagostomum radiatum*, an important parasite of Indian cattle. He gives an account of the development of the worm from the egg to the young adult, describing the various stages of larval growth in the free state, as observed in cultures, up to the ensheathed, infective stage. This is followed by details of the parasitic third stage larvae which penetrate the mucosa of the small intestine



and give rise to nodules within which they grow rapidly and, after undergoing an ecdysis, become fourth stage larvae, each provided with a globular provisional buccal capsule. Whilst still within the intestinal nodules the larvae can be recognized by the shape of the tail and position of the genital rudiments, as males or females. The fourth stage larvae, on escaping from the nodules into the gut lumen, grow rapidly and after undergoing the final ecdysis, reach the adult condition and come to reside in the colon. Maturation of the gonads now takes place and eggs may be laid from 30 to 40 days from the time of larval infection. T.G.

(119b) Mahajan reports on the incidence, treatment, and control of fluke diseases in ruminants since 1932, mainly in the two irrigation areas of Pocharam and Nizamsagar in Hyderabad, where extensive flooding occurs. The most important fluke is *Fasciola gigantica* which occurs in 50% of cattle, 64% of buffaloes, 25% of sheep, and 20% of goats in these two areas. The intermediary is *Limnaea acuminata*. Simultaneous treatment of stock with carbon tetrachloride and of infested areas with copper sulphate solution (sprayed) has given promising results; an additional control measure is the collection and destruction of snails by the populace on a special holiday annually set aside for the purpose. B.G.P.

(119c) In the Province of Bombay and especially in the water-logged tracts of the districts of Dharwar, Belgaum and North Kanara and in Raver taluka of the East Khandesh district cattle owners incur heavy losses as working animals are rendered quite unfit for work when affected with nasal granuloma due to *Schistosoma nasalis*. 10% to 20% of the cattle population are infected. Experimental treatment was carried out with (i) tartar emetic, (ii) antimosan. Naik is of opinion that a course of treatment with tartar emetic at 1.5 grains per 100 lb. body weight, as recommended by Rao & Mudaliar [see Helm. Abs., Vol. V, No. 329a] is the most practical method. Treatment and prophylactic attack on the intermediaries every year during the monsoon is necessary to ensure eradication of the disease. R.T.L.

(119d) The Mudaliars state that, in sheep at the Hosur Cattle Farm, the most numerous and clinically important parasites are *Haemonchus contortus*, *Oesophagostomum columbianum*, and *Moniezia* spp. Cases have occurred in which the entire small intestine was packed solid with tapeworms. Lesions are briefly described. B.G.P.

## 120—Indian Veterinary Journal.

- a. BHAT, P. V., 1942.—“Schistosomiasis in dogs.” 19 (1), 34–37.

(120a) Clinical reports are given of two cases of *Schistosoma spindalis* in dogs in India. The opinion is expressed that “Nema” capsules given for concomitant hookworm infection had decidedly reduced the schistosome eggs in the faeces. R.T.L.

## 121—Internationale Revue der Gesamten Hydrobiologie und Hydrographie.

- a. BECKER, J., 1942.—“Die Abwehreleinrichtungen von Haut und Kieme beim Karpfen gegenüber mechanischen, chemischen und parasitären Reizen.” 41 (4/6), 265–344.

(121a) In the course of his monograph on the defence reactions of the skin and gills of carp to mechanical, chemical and parasitic stimuli, Becker deals briefly with Gyrodactylus infection of the skin and Dactulogyrus infection of the gills. The main feature in both cases is a very marked hypertrophy of the epithelium. A.E.F.

## 122—Journal of the American Veterinary Medical Association.

- a. NICHOLSON, L. G. & McCULLOCH, E. C., 1942.—“Some effects of feeding phenothiazine to chickens in various amounts.” 101 (786), 205–209.  
 b. BROOKS, jr., T. J. & BROWN, H. W., 1942.—“The anthelmintic activity of ficin in dogs.” 101 (787), 250–253.  
 c. BEAUDETTE, F. R., 1942.—“*Heterakis isolonche* Linstow (1906) in a pheasant with remarks on tuberculosis and gapeworms.” 101 (787), 274–275.

(122a) Nicholson & McCulloch have investigated the effect of daily doses of phenothiazine on the weight, egg-production, and blood haemoglobin of fowls. In the first trial, 6 hens given



1 g. daily for 85 days showed reductions in all 3 criteria, whilst 6 hens given 0.5 g. did not. In the second and third trials flock medication was achieved by mixing 2 kg. phenothiazine with each ton of mash and feeding this to (respectively) 48 cockerels and 48 pullets: no deleterious effects were found. B.G.P.

(122b) Brooks & Brown administered ficin to 8 dogs at the rate of 1 g. or 0.75 g. per kg. live weight, given by stomach tube as a 15% aqueous suspension. The drug appears to be highly efficacious against ascarids and *Trichuris* but has little or no effect on other parasites. Extracted from the latex of figs (*Ficus* spp.), ficin has a high content of proteolytic enzyme which readily digests damaged intestinal mucosa; therefore, since there are other effective ascaricides and *Trichuris* is of little pathogenic importance, the use of ficin is not recommended. B.G.P.

(122c) Beaudette reports the presence of *Heterakis isolonche* in the caeca of a golden pheasant, *Chrysorochus pictus*, in New Jersey. Both caeca were studded with nodules as a result of this infection. The bird also carried a few *H. gallinae* and a single pair of gapeworms about half-way down the trachea. P.A.C.

### 123—Journal of Animal Science.

- a. WHITEHURST, jr., V. E. & SWANSON, L. E., 1942.—“Phenothiazine as an anthelmintic for sheep.” 1 (3), 256-259.

(123a) After failing to control parasitism in an experimental flock of sheep either by monthly (and later fortnightly) dosing with “cunic” or by changing from permanent pasture to arable grazing, Whitehurst & Swanson treated them with 14 monthly doses of phenothiazine at the rate of 25 g. per head per dose, mixed with 250 g. of concentrates and fed after a fast of 24 hours. Treated sheep made considerably greater weight-gains in the end, though the controls made slightly greater gains during the first 4 months. Deaths fell from 15.9% to 1.5%. Post-mortems on 15 treated sheep and 8 controls showed that all the stomach worms were greatly reduced in numbers. B.G.P.

### 124—Journal. Indian Medical Association.

- a. RAO, S. R., 1942.—“Some epidemiological factors of guinea-worm disease as noticed in a recent survey of the Osmanabad district.” 11 (11), 329-337.

(124a) Rao finds that the Osmanabad district of Hyderabad is heavily infected with guinea-worm, particularly Parenda and Tuljapur. The incidence actually reaches 155 per mille in some villages. No one is completely immune, although adult males appear to be prone to the disease, and rural populations are often heavily affected. Infection occurs at the wells, all the step wells and many of the draw wells containing cyclops. It is suggested that draw wells should be constructed and all wells limed monthly and that permanent water supplies should be provided in populated areas. Tuljapur seems to be an important nodal point disseminating the disease over a wide area. P.A.C.

### 125—Journal of Laboratory and Clinical Medicine.

- a. MAUSS, E. A. & OTTO, G. F., 1942.—“The occurrence of *Trichinella spiralis* larvae in tissues other than skeletal muscles.” 27 (11), 1384-1387.

(125a) Mauss & Otto show experimentally that invasion of tissues, other than skeletal muscles, with larvae of *Trichinella spiralis* is of very rare occurrence and is unlikely to have much significance except in particularly heavy infections. They estimate that for every larva found in some other tissue, 10,000 are found in muscle. They succeeded in finding occasional larvae in mice in the heart wall (7 times), lung (once), and liver and kidney (twice). None were ever recovered from the testes, brain or spleen. P.A.C.

### 126—Journal of the Medical Association of the State of Alabama.

- a. ANDREWS, J., 1942.—“Hookworm disease control methods in Georgia.” 11 (10), 342-347.

(126a) [For abstract of this paper see Helm. Abs., Vol. XI, No. 38a.]

## 127—Journal of the Mount Sinai Hospital.

- \*a. BERNSTEIN, S. S., 1942.—“Echinococcus cyst of the liver. A prolonged course with operative removal and complicating thrombosis of the portal vein.” 8, 399–408.

## 128—Journal of Parasitology.

- a. CHANDLER, A. C., 1942.—“The helminths of raccoons in East Texas.” 28 (4), 255–268.
- b. FISCHTHAL, J. H., 1942.—“Three new species of *Phyllodistomum* (Trematoda : Gorgoderidae) from Michigan fishes.” 28 (4), 269–275.
- c. CHEN, H. T., 1942.—“The metacercaria and adult of *Centrocestus formosanus* (Nishigori, 1924), with notes on the natural infection of rats and cats with *C. armatus* (Tanabe, 1922).” 28 (4), 285–298.
- d. BRAND, T. VON & SAURWEIN, J., 1942.—“Further studies upon the chemistry of *Macracanthorhynchus hirudinaceus*.” 28 (4), 315–318.
- e. REID, W. M., 1942.—“Certain nutritional requirements of the fowl cestode *Railletina cesticillus* (Molin) as demonstrated by short periods of starvation of the host.” 28 (4), 319–340.
- f. SUMMERS, W. A., 1942.—“A modification of zinc sulfate centrifugal flotation method for recovery of helminth ova in formalinized feces.” 28 (4), 345–346.
- g. PENN, jr., G. H., 1942.—“Parasitological survey of Louisiana muskrats.” 28 (4), 348–349.
- h. ROTHCHILD, M., 1942.—“A seven-year-old infection of *Cryptocotyle lingua* Creplin in the wrinkle *Littorina littorea* L.” 28 (4), p. 350.
- i. THRELKELD, W. L. & HENDERSON, M. E., 1942.—“Notes on the musculature of the male genitalia of *Haemonchus contortus*.” 28 (5), 351–360.
- j. DeEDS, F. & THOMAS, J. O., 1942.—“Studies on phenothiazine. XI. The excretion of phenothiazine.” 28 (5), 363–367.
- k. GOBLE, F. C., 1942.—“*Crenosoma zederi* n. sp. (Nematoda : Metastrongyloidea), a new lung-worm from the skunk (*Mephitis nigra*).” 28 (5), 381–384.
- l. PERRY, M. L., 1942.—“A new species of the acanthocephalan genus *Filicollis*.” 28 (5), 385–388.
- m. FISCHTHAL, J. H., 1942.—“*Triganodistomum hypentelii* n. sp. (Trematoda : Lissorchiidae) from the hog sucker, *Hypentelium nigricans* (Le Sueur).” 28 (5), 389–393.
- n. CABLE, R. M. & HUNNINEN, A. V., 1942.—“Studies on the life history of *Siphodera vinal-edwardsii* (Linton) (Trematoda : Cryptogonimidae).” 28 (5), 407–422.
- o. ERICKSON, A. B. & HIGHBY, P. R., 1942.—“Parasites of the woodland caribou.” 28 (5), p. 423.
- p. ROTHCHILD, M., 1942.—“A note on immunity reaction in the black-headed gull (*Larus ridibundus* L.) infected with *Maritrema oocysta* Lebour, 1907.” 28 (5), 423–424.
- q. FORBES, W. C., 1942.—“Helminths from the Norway rat in northeastern Ohio.” 28 (5), p. 431.
- r. MACY, R. W., 1942.—“The life cycle of the trematode *Echinostomum callawayensis* Barker.” 28 (5), 431–432.

(128a) From 13 *Procyon lotor lotor* from East Texas, Chandler collected 12 species of helminths of which the following are new : *Oochoristica procyonis* n. sp., *Molineus barbatus* n. sp., *Synhimantus longigutturata* n. sp., *Gnathostoma procyonis* n. sp. and *Dirofilaria tenuis* n. sp. The 5 known species are : *Pharyngostomoides procyonis*, *Fibricola texensis*, *Eurytrema procyonis*, *Mesocostoides variabilis* and *Macracanthorhynchus ingens*. Provided Leidy's *Filaria insignis* is not identical with *Dracunculus medinensis*, Chandler proposes for it a new combination, *Dracunculus insignis*. Attention is drawn to the difference between the cephalic structures of *D. insignis* and those described by Moorthy for *D. medinensis*. *Arthrocephalus lotoris* n. comb. is proposed for *Uncinaria lotoris* Schwartz, 1925. R.T.L.

(128b) *Phyllodistomum semotili* n. sp., *P. notropidis* n. sp. and *P. nocomis* n. sp. are described by Fischthal from the ureters and urinary bladder of *Semotilus atromaculatus atromaculatus*, *Notropis cornutus chrysocephalus* and *Nocomis biguttatus*, respectively, from Michigan. All show a high degree of amphitropy in the position of the ovary. N.G.S.

(128c) Description of the metacercaria of the heterophyid, *Centrocestus formosanus*, and also of the adult for the first time in English, is given by Chen. In addition to several freshwater fishes, a frog and a toad are shown to act as intermediate hosts near Hong Kong. The metacercariae from the two types of host show no difference and they have been reared to the



adult state in several laboratory animals. The economic implications are discussed. Specific criteria separating *C. formosanus*, *C. armatus* and *C. cuspidatus* are examined, and only those relating to the eggs appear to be reliable. Natural infections in *Mus norvegicus* and a cat from Canton are identified as *C. armatus*.  
N.G.S.

(128d) Von Brand & Saurwein report that a polysaccharide, probably galactogen, as well as true glycogen, is present in *Macracanthorhynchus hirudinaceus*. Spectrographic analysis of males, females, eggs and ovaries showed the presence of potassium, sodium, calcium, magnesium, manganese, aluminium, iron, copper, silicon and phosphorus.  
W.P.R.

(128e) It has been known for some time that glycogen is an important substance in the metabolism of cestodes and Reid shows here that during periods of 20 hours starvation *Railletina cesticillus* uses up to 90% of its glycogen. It is replaced after feeding but not for some hours. The breaking off and expulsion of gravid segments during starvation may be associated with this fall in glycogen content. Fat is formed as a waste product of glycogen metabolism but seems to be excreted immediately. Starvation leads to a rise in water content, a natural result of the fall of glycogen, but has no effect on nitrogen content. He emphasizes again the importance of muscular action in overcoming peristalsis.  
P.A.C.

(128f) The zinc sulphate concentration flotation (CF) method (specific gravity 1.180) described by Faust et al. in 1938 [see Helm. Abs., Vol. VII, No. 6b] is compared with the Willis brine levitation method (sp. g. 1.200). Of 100 faecal specimens examined (all of which had been in contact with 3 to 4% formalin for 2 weeks) the former method gave 10% positive for hookworm and the latter 60%. A modification of the CF method (sp. g. 1.200, omitting cheesecloth straining and the 2nd washing) gave results comparable to those obtained by the Willis method: of 1,222 specimens tested the former method showed 32.1% positive for hookworm and the latter 33.3%. For all helminths the modified CF gave 37% and the Willis method 36.9%. The Willis technique can be carried out in half the time required for Faust's CF method.  
M.R.Y.

(128h) Rothschild notes that an infection of *C. lingua* in a wrinkle collected in 1935 is still producing cercariae; the present daily output of 1,600 is nearly double that of 1938. She draws attention to its raising several questions relating to the theory of germinal lineage in trematodes.  
N.G.S.

(128j) DeEds & Thomas have shown that, when phenothiazine is administered to rats, rabbits and man, there is excreted in the urine not merely the oxidation/reduction system: thionol leucothional, but also the system: phenothiazone/leucophenothiazone. The validity of identifying substances by means of determining oxidation/reduction potentials is discussed and accepted. Leucophenothiazone has the melting point 172° to 173°C.  
B.G.P.

(128k) *Crenosoma zederi* n.sp. can be differentiated from *C. striatum* and *C. taiga* by the absence of an obvious dorsal branch on the spicule, and from *C. vulpis*, *C. mephitis* and *C. potos* in the shape of the gubernaculum. From all described species the males of *C. zederi* can be distinguished by the presence of cuticular folds as far back as the anterior ends of the spicules. Some discrepancies in descriptions of the different species of *Crenosoma* are noted.  
R.T.L.

(128l) *Filicollis altmani* n.sp. from *Melanitta perspicillata* and *M. deglandi* differs from *F. anatis* in the number and shape of the cement glands and of the longitudinal rows of hooks on the proboscis and the shape of the middle shell of the embryo.  
R.T.L.

(128m) *Triganodistomum hypentelii* n.sp. is described by Fischthal from the small intestine of *Hypentelium nigricans*, a fresh-water fish from Michigan. The genus is reviewed and a key given for the five species. *T. hypentelii* is unique in that the vitellaria begin only at the posterior border of the acetabulum.  
N.G.S.

(128n) The life-history of *Siphodera vinaledwardsii* has been proved by Cable & Hunninen: the rediae in *Bittium alternatum* produce immature pleurolophocercous cercariae which continue development in the tissues of the snail, and later penetrate the skin of the flounder

*Paralichthys dentatus*. Metacercariae more than 10 days old become mature in the intestine of *Opsanus tau*. A re-study of the anatomy of the life-history phases throws light on the affinities of the genus, and from a discussion of the opisthorchioid trematodes it is concluded that the separation of Acanthostomidae from Cryptogonimidae is of doubtful validity. N.G.S.

(128o) From 4 specimens of *Rangifer caribou sylvestris* the helminths collected were: *Dictyocaulus viviparus*, *Setaria cervi*, *Moniezia expansa*, and indications, from the presence of old liver abscesses, of *Fascioloides magna*. R.T.L.

(128p) Rothschild finds that the black-headed gull, *Larus ridibundus*, becomes resistant to heavy infestations with *Maritrema oocysta*. When such a bird was daily fed large numbers of metacercariae the peak of the infection was reached about the sixth day, when a rapid decline set in. Worms in all stages of development appeared in the faeces and metacercariae were passed out still encysted. The bird, however, was still susceptible to infection with echinostomes. P.A.C.

(128q) Of 50 Norwegian rats in north-eastern Ohio helminths occurred in 49. The species collected were: *Hymenolepis nana*, *H. diminuta*, *Cysticercus fasciolaris*, *Trichosomoides crassicauda*, *Nippostrongylus muris*, *Ganguleterakis spumosa* and *Syphacia obvelata*. The percentage incidence of each is mentioned. R.T.L.

(128r) Macy found metacercariae encysted in *Planaria* sp. from a lake in Minnesota; when these were fed to rats they developed into adults in 13 days. These resembled *Echinostomum callawayensis* which Barker found in muskrats, except that they had fewer ova. The first intermediate host was proved to be *Physa gyrina*, from which the cercariae penetrated *Planaria*, but failed to infect guppies or tadpoles. Muskrats and naturally infected snails occurred in the same locality. N.G.S.

#### 129—Journal of Pediatrics.

- a. EVANS, H. L. & MOORE, H., 1942.—“Comparison of gentian violet and hexylresorcinol in the treatment of pinworm infestation.” 20 (5), 627–631.

(129a) Eighty or 78% of 102 children in an orphans' home in Texas were found by the use of 7 consecutive NIH swabs to be positive for *Enterobius vermicularis*. Two groups comparable as to age and sex were treated with smaller doses of gentian violet and hexylresorcinol than those recommended by other workers. The dose of gentian violet used was 1 mg. per lb. body weight per day, this dosage being divided into three equal doses and administered 30 minutes before each of three meals. This was given every day for a week and repeated twice after intervening rest weeks. The dose of hexylresorcinol (caprokol pills) was 12 mg. per lb. body weight, the maximum single dose being 1 g. This was given once a week for 5 consecutive weeks. Gentian violet was tolerated better than hexylresorcinol, and its efficacy was 77% as compared with 50% in the case of hexylresorcinol. M.R.Y.

#### 130—Journal of Pharmacology and Experimental Therapeutics.

- a. ANDREWS, J. C. & WEBB, B. D., 1942.—“The effect of hookworm damage on levels of quinine attained in blood and urine of dogs following single doses of quinine sulfate.” 75 (3), 191–195.

#### 131—Journal of the Royal Naval Medical Service.

- a. WHITTERIDGE, S. M., 1942.—“A case of *Trichinella spiralis* infection with mental symptoms.” 28 (3), 290–293.

(131a) Whitteridge describes a suspected case of *Trichinella spiralis* in a naval petty officer. The symptoms included nausea and headache followed by muscular stiffness and pains. Walking and jaw movements became very difficult. There was considerable mental torpor. Improvement followed rest and treatment, the nervous symptoms disappeared and the mental condition became normal on the 27th day. There was a marked eosinophilia but no larvae of *T. spiralis* could be found in either blood or muscle. P.A.C.



## 132—Journal of the Tennessee Academy of Science.

- a. BANGHAM, R. V. & VENARD, C. E., 1942.—“Studies on parasites of Reelfoot Lake fish. IV. Distribution studies and checklist of parasites.” 17 (1), 22–38.
- b. REIBER, R. J. & BYRD, E. E., 1942.—“Some nematodes from mammals of Reelfoot Lake in Tennessee.” 17 (1), 78–89.
- c. BYRD, E. E., REIBER, R. J. & PARKER, M. V., 1942.—“The anatomy of a lung fluke from the opossum (*Didelphis virginiana* Kerr).” 17 (1), 116–129.
- d. BYRD, E. E., REIBER, R. J. & PARKER, M. V., 1942.—“Mammalian trematodes. I. Trematodes from the opossum, *Didelphis virginiana* Kerr.” 17 (1), 130–142.
- e. BYRD, E. E. & REIBER, R. J., 1942.—“Mammalian trematodes. II. Three flukes from small mammals.” 17 (1), 143–148.
- f. BYRD, E. E. & MACY, R. W., 1942.—“Mammalian trematodes. III. Certain species from bats.” 17 (1), 149–156.

(132b) Reiber & Byrd give brief descriptions of 10 nematodes recovered from small mammals at Reelfoot Lake. There are no new species. A.E.F.

(132c) Byrd & co-workers give a full description of the anatomy, including complete details of the excretory system, of *Paragonimus westermanni*, based on specimens recovered from the opossum, *Didelphis virginiana*. The measurements of these specimens were not larger than the minimum given for specimens recovered from other hosts. *Didelphis virginiana* is a new host for *P. westermanni*. A.E.F.

(132d) Byrd & co-workers report 8 species of trematodes from *Didelphis virginiana*. All the species, none of which is new, are described in detail, with the exception of *Paragonimus westermanni*, which has been dealt with in a separate paper [see preceding abstract]. A.E.F.

(132e) Byrd & Reiber report *Echinochasmus schwartzi* and *Phagocola nana* from *Ondatra rivalicia*, and *Hasstilesia texensis* from *Sylvilagus aquaticus* and *S. floridanus*. All are new host records, except for *S. floridanus*. A.E.F.

(132f) Byrd & Macy record 6 species of trematodes from bats, including *Prosthodendrium transversum* n. sp. from *Lasiurus borealis borealis*, and *P. singularium* n.sp. from *Dasypterus floridanus*. A.E.F.

## 133—Klinische Wochenschrift.

- a. OELKERS, H. A. & ZESSLER, H., 1942.—“Untersuchungen an Oxyurenlarven.” 21 (12), 269–270.

(133a) Oelkers & Zessler find that only those *Enterobius* eggs which have reached the tadpole stage will develop further *in vitro*, such eggs producing motile larvae within a few hours. The eggs are very resistant to antiseptics and anthelmintics, less so to acids and bases. Only 2 to 3% hatch without the assistance of peptic or tryptic enzymes, which rapidly cause all the eggs to hatch. Hatched larvae survive only 30 minutes at pH 1.5 to 2.0, but several days when the pH is near the neutral point. Of a number of anthelmintics tested against hatched larvae, only thymol and a few ethereal oils were relatively effective. B.G.P.

## 134—Medizinische Klinik.

- a. KEILHACK, H., 1942.—“Ueber die Erkennung und Behandlung der Wurmkrankheiten.” 38 (16), 364–367.

## 135—Military Surgeon.

- a. MARBLE, A., SKOOG, A. P. & BUCHOLZ, D. J., 1942.—“Trichinosis: report of an outbreak at Camp Edwards, Massachusetts.” 90, 636–643.

## 136—Mississippi Farm Research.

- \*a. PINCKARD, J. A., 1942.—“Root-knot: suggestions for its prevention, control.” 5 (4), p. 2.

(136a) The root-knot nematode, *Heterodera marioni*, is a serious pest of gardens in southern U.S.A. Pinckard suggests suitable rotational crops and various hygienic measures to lessen its depredations. [From an abstract in Exp. Sta. Rec., 87, 381–2.] T.G.

## 137—Münchener Medizinische Wochenschrift.

- a. MUMME, C. & SUNDERMANN, A., 1942.—“Zur Klinik der Trichinose.” 89 (35), 758–760.
- b. POHLMANN, E., 1942.—“Enzephalitis bei Trichinose.” 89 (35), 760–761.
- c. GAASE, A., 1942.—“Die Komplementbindungsreaktion auf Trichinose mit dem neuen Schweine-Antigen.” 89 (35), 761–762.

(137c) Gaase shows that Trichinella antigen prepared from the musculature of trichinous pigs is much more reliable for the diagnosis of the disease in man than antigen prepared from rats. In a series of human cases of trichinosis, rat-antigen was either negative or only weakly positive, whilst pig-antigen gave strongly positive results. It is stated that the Parasitological Institute of the I. G. Farben-Werke is now preparing only pig-antigen. A.E.F.

## 138—New England Journal of Medicine.

- a. AUGUSTINE, D. L., 1942.—“Trichinosis and enterobiasis: their importance in New England.” 226 (12), 488–495.

(138a) Augustine states that trichinosis is the most serious parasitic disease in New England and that pinworm infection is second in frequency and of a less serious nature. He considers the nature of the disease, stressing the irregularity of the clinical course of trichinosis and the importance of the puffy eye symptom. Methods of diagnosis and the immunity reactions are reviewed. Considering next pinworm infection, he points out the difficulties of control owing to the behaviour of the female and the nature of the life-history. Infestations can only be dealt with by means of simultaneous treatment of the household and strict hygienic measures over a period of time longer than the survival of the eggs. P.A.C.

## 139—Ohio State Medical Journal.

- a. HAYS, R. R. & SAUVAGEOT, J. P., 1942.—“Trichinosis encephalitis.” 38 (6), 538–540.

## 140—Proceedings of the Helminthological Society of Washington.

- a. PRICE, E. W., 1942.—“North American monogenetic trematodes. V. The family Hexabothriidae, n.n. (Polystomatoidea).” 9 (2), 39–56.
- b. ANDREWS, J. S. & CONNELLY, J. W., 1942.—“Early natural infections of suckling pigs with helminth parasites.” 9 (2), 56–57.
- c. KATES, K. C., 1942.—“Observations on fatalities in sheep caused primarily by heavy natural infections with the stomach worm, *Haemonchus contortus*.” 9 (2), 57–60.
- d. PORTER, D. A., 1942.—“On the survival of the preparasitic stages of the cattle lungworm on pastures.” 9 (2), 60–62.
- e. SPINDLER, L. A. & HILL, C. H., 1942.—“Death of pigs associated with the presence in the heart tissue of larvae of *Strongyloides ransomi*.” 9 (2), 62–63.
- f. JONES, M. F. & NOLAN, M. O., 1942.—“Studies on oxyuriasis. XXVI. Resistance of white rats on a vitamin A-deficient diet to experimental infection with *Enterobius vermicularis*.” 9 (2), 63–65.
- g. DIKMANS, G., 1942.—“New host-parasite records.” 9 (2), p. 65.
- h. DIKMANS, G., 1942.—“A new nematode, *Skrjabinema parva* (Nematoda: Oxyuroidea), from deer.” 9 (2), 66–68.
- i. ALLEN, R. W. & WEHR, E. E., 1942.—“Earthworms as possible intermediate hosts of *Capillaria caudinflata* of the chicken and turkey.” 9 (2), 72–73.
- j. WEHR, E. E., 1942.—“The occurrence in the United States of the turkey ascarid, *Ascaridia dissimilis*, and observations on its life history.” 9 (2), 73–74.
- k. GETTIER, D. A., 1942.—“Studies on the saline requirements of *Neocchinorhynchus emydis*.” 9 (2), 75–78.
- l. CHITWOOD, B. G. & BLANTON, F. S., 1942.—“The efficacy of vapor-heat treatments of narcissus bulbs, variety Triumph, for control of the bulb or stem nematode, *Ditylenchus dipsaci* (Kühn) Filipjev, and the tolerance to this treatment of narcissus bulbs, variety King Alfred.” 9 (2), 78–82.
- m. CHRISTIE, J. R., 1942.—“A description of *Aphelenchoides besseyi* n.sp., the summer-dwarf nematode of strawberries, with comments on the identity of *Aphelenchoides subtennis* (Cobb, 1926) and *Aphelenchoides hodsoni* Goodey, 1935.” 9 (2), 82–84.
- n. CHRISTIE, J. R., 1942.—“The influence of chrysanthemum propagating methods on dissemination of the foliar nematode.” 9 (2), 84–87.



(140a) Price makes radical changes in the nomenclature of the gill trematodes of selachians. Since *Hexabothrium* Nordm. has priority over *Onchocotyle* Dies., the family becomes Hexabothriidae n.n.: this is divided into the subfamilies Hexabothriinae n.n., Rajonchocotylinae n. subf., and Diclybothriinae Price, on the basis of the disposition of the paired vaginae and the number of terminal hooks. Hexabothriinae includes *Hexabothrium* Nordm.; *Heteronchotyle* Brooks; *Erpocotyle* v. Ben. & Hesse (= *Squalonchocotyle* Cerf. partim); and *Neerperocotyle* n.g. (= *Squalonchocotyle* Cerf. partim), with *N. macallumi* n. sp., from *Carcharias limbatus*, as the type. The last two genera differ only in the presence of vitellaria in the appendix of the latter and their absence in the former. In Rajonchocotylinae, *Rajonchocotyle* Cerf. similarly differs from *Rajonchocotylodes* Price. Diclybothriinae contains only *Diclybothrium* Leuck.; *D. hamulatum* (Simer) is now considered distinct from *D. armatum* Leuck., both of which are reported from N. America. Other new species are: *E. macrohystera* n.sp. (= *S. vulgaris* of MacCallum) from *Carcharias milberti*; *Rajonchocotyle laevis* n.sp. from *Raja laevis*; *R. wehri* n.sp. from *Raja stellulata*. *S. acanthi* MacCallum is found to be a synonym of *E. squali* (MacCallum) n. comb. A complete list of new combinations is given. N.G.S.

(140b) In post-mortem examinations of 17 sucking pigs, reared under conditions of partial sanitation, a sexually mature female *Strongyloides ransomi* occurred in a 4-day-old pig, a live exsheathed third stage larva of *Stephanurus dentatus* was recovered from the muscle tissue of a 12-day-old pig, and *Oesophagostomum* sp. eggs were present in the faeces of a pig 42 days old. These results indicate the desirability of ample range for sows and litters. R.T.L.

(140c) The clinical symptoms of severe haemonchosis were those of a severe progressive anaemia. 17,850 *Haemonchus contortus* was the greatest number, recovered from the largest sheep which weighed 75 lb. In 5 lambs the numbers ranged from 14,520 to 3,309. In most cases the presence of other nematode species did not complicate the general clinical and pathological picture in fatal infections as the numbers were relatively low. R.T.L.

(140d) As the treatment of lungworm in cattle is not satisfactory as it is, control must therefore be based on pasture management. Porter has carried out experiments, in Alabama, to determine the duration of infection on the pastures in the absence of re-infection. The results which are reported in detail show that whereas lungworms readily spread from calf to calf when they are crowded together, on comparatively dry and well drained pastures the condition is alleviated when the animals are given wider range and that during dry warm weather the infection persisted, after the infected animals were removed, for at least one week, but not for 6 to 7 weeks. R.T.L.

(140e) Young pigs died suddenly within 2 or more weeks after experimental infection with *Strongyloides ransomi*. Third stage larvae were found in the heart in the regions of the auriculoventricular node and bundle. In 2 pigs that died several weeks after natural infection there were anaemic infarcts in the heart muscle associated with emboli of dead larvae. Preliminary observations of the heart sounds indicated that a condition of partial heart block occurs after infection. R.T.L.

(140f) Jones & Nolan have failed to establish an infection of *Enterobius vermicularis* in white rats, even when they were fed a diet deficient in vitamin A and were showing clinical symptoms of this disease. The larvae could be recovered usually from the lower third of the intestine for 7 days after feeding with embryonated ova, but neither larvae nor adults were found after a longer time. P.A.C.

(140g) The following new hosts are recorded: *Bos taurus* for *Ostertagia bisonis*, in Montana; *Ovis canadensis* for *O. grühneri* and *O. occidentalis*, in Idaho; and *Oreamnos americanus* (mountain goat) for *O. marshalli*, *O. occidentalis*, *Protostrongylus rushi* and *Thysanosoma actinioides*, in Idaho. An unidentified species of *Skrjabinema* was collected from the viscera of a deer, probably *Odocoileus hemionus*. R.T.L.

(140h) *Skrjabinema parva* n.sp., described by Dikmans, may be distinguished from the other two species of the subgenus *Skrjabinema*, viz., *S. ovis* and *S. oreamni*, by its smaller size and by its less prominent lips. The mouth does not, however, completely surround the

lips as in the subgenus *Chilocrypta*. The worms, which consisted of females only, were found in deer (probably *Odocoileus hemionus*) from Idaho, U.S.A. D.O.M.

(140i) Allen & Wehr record the presence of *Capillaria caudinflata* in the turkey in the United States. It was transmissible to chickens and they show that undetermined species of earthworms could act as vectors. It is not certain whether they are mechanical or essential vectors. P.A.C.

(140j) Wehr records for the first time the presence of *Ascaridia dissimilis* in the wild turkey in Pennsylvania. The life-cycle seems to resemble that of *A. galli*. The eggs become infective in about 2 weeks and develop to maturity in the host in about 2 months. The domestic turkey is a possible host for the parasite. P.A.C.

(140k) Gettier deals with the saline requirements of *Neoechinorhynchus emydis*. The best molecular concentration for survival lay between 0.5 and 0.7%. The toxicity of cations in isotonic solutions was in the following order: K, Mg, Ca, Na. The presence of small quantities of  $\text{CaCl}_2$  decreased the toxicity of the Na but the Mg and K ions did not. The survival was found to be longer in modified Ringer solutions isotonic to 0.5% NaCl solution than in a pure 0.5% NaCl solution. D.W.F.

(140l) Chitwood & Blanton report on the efficacy of vapour heat treatment of narcissus bulbs for the eradication of the bulb eelworm, *Ditylenchus dipsaci*. The varieties of narcissus tested were Triumph and King Alfred. The results show that, as compared with the standard hot-water-formalin treatment (0.5% formalin) of 4 hours at 110°F., which has a greater efficacy than 95%, the vapour heat treatment demands higher temperatures and longer times to kill the contained nematodes, conditions which may be injurious to the bulbs. T.G.

(140m) Christie gives a technical description of *Aphelenchoides besseyi* n.sp. which is responsible for summer-dwarf disease of strawberry plants in south-eastern U.S.A. This eelworm has, up to the present, been confused with *Aph. fragariae* but Christie shows that it is noticeably shorter than that species and possesses other differential features the most important of which are the short, narrow, postvulvar uterine sac, the comparatively short ovary and the position of the excretory pore slightly in front of the nerve ring. In a note on *Aphelenchoides subtenuis* (Cobb, 1926) Christie shows, from a study of unpublished notes and drawings left by Cobb, that the worms described by him, without illustrations, possess the same morphological features as those described and illustrated by Goodey in 1935 under the name of *Aph. hodsoni*. The latter name must consequently give place to Cobb's earlier specific name *subtenuis*. T.G.

(140n) Christie compares the incidence of disease caused by the chrysanthemum eelworm, *Aphelenchoides ritzema-bosi*, in plants propagated by two methods: one lot from lateral shoots arising from the old crown, the other from the tips of shoots after the old crown has been brought into growth. These last are called top cuttings. He shows that in plants propagated by these two methods, from an originally infected stock plant, the degree of eelworm infestation in those raised from top cuttings was negligible whereas in those plants from lateral cuttings the infestation was considerable. A good measure of control over the disease caused by this eelworm can thus be obtained by raising plants from top cuttings. T.G.

#### 141—Proceedings of the Pennsylvania Academy of Science.

- a. HERBER, E. C. & SPENCER, H. C., 1942.—“Production of mother sporocysts in *Notocotylus urbanensis*,” 16, 109–110.

(141a) *Notocotylus urbanensis*, a frequent parasite of musk-rats in Pennsylvania, develops in the snail, *Physa gyrina*, from miracidia to cercaria. The stages found in the snail are mother sporocyst, mother redia and daughter redia. Cercariae encyst on vegetation. Herber & Spencer describe a successful technique for producing large numbers of mother sporocysts in the laboratory. A.E.F.

#### 142—Proceedings of the Rhodesia Scientific Association.

- a. JONES, E. B., 1942.—“Preventive medicine in Southern Rhodesia,” 39, 68–87.



(142a) Among 1,477 Europeans in Southern Rhodesia who were examined for urinary infections with Bilharzia 105 were positive for *Schistosoma haematobium*, 1 for *S. mansoni* and 1 for *S. matthei*: a total of 7.2%. Of 1,490 examined for intestinal infection 62 were positive for *S. mansoni*, 9 for *S. haematobium* and 1 for *S. matthei*: a total of 4.8%. Of 47 coloured people 8 were positive for *S. haematobium*, i.e., 17%. None of 48 was positive for intestinal infection.  
R.T.L.

#### 143—Proceedings of the West Virginia Academy of Science.

- a. ZUCCHERO, P. J., 1942.—“Notes on the life cycle of *Capillaria annulata*.” 15, 96–106.

(143a) Zuccherro has investigated certain aspects of the life-cycle of *Capillaria annulata*, a parasite of the crop of galliform birds. Embryonation of the eggs was noticeably retarded in cultures containing many bacteria; the time needed for the development of the infective larva varied from 18 days at the optimum temperature—about 27° to 28.6°C.—to 50 days when the temperature was as low as 20.5° to 21°C. Larvae never hatched in the culture medium nor when fed directly to a chicken. Hatching, however, readily occurred in the gut of earthworms. The viability of larvae decreases with increasing age; those of 14 to 15 months were apparently dead.  
P.A.C.

#### 144—Records of the Indian Museum.

- a. BASIR, M. A., 1942.—“Nematodes parasitic in *Gryllotalpa*.” 44 (1), 95–106.

(144a) Basir has found certain nematodes in the intestine of the insect *Gryllotalpa*. All are oxyurids belonging to the subfamily Thelastomatinae and technical descriptions are given of the following new genera and species: *Gryllocola gryllocola* n.g., n.sp., *Gryllophila gryllophila* n.g., n.sp., *Talpicola talpicola* n.g., n.sp., *Mirzaiella asiatica* n.g., n.sp., and *Periplaneticola periplaneticola* n.sp. The paper is illustrated with numerous drawings. T.G.

#### 145—Revista Clínica Española.

- a. GOTOR, P., 1942.—“El diagnóstico de la cisticercosis cerebral.” 4 (2), 121–123.

#### 146—Revista Médica de Chile.

- a. NEGhme RODRÍGUEZ, A., 1942.—“Terapéutica anti-helmintica.” 70, 211–212.

#### 147—Rhodesia Agricultural Journal.

- a. WHEELDON, H. G., 1942.—“Poultry parasites.” 39 (5), 358–368.

#### 148—Schweizer Archiv für Tierheilkunde.

- a. KRUPSKI, A. & UEHLINGER, E., 1942.—“Beitrag zur Frage des Vorkommens der Lungenwurmkrankheit des Rindes in der Schweiz nebst klinischen, pathologisch-anatomischen und histologischen Befunden.” 84 (7), 253–262; (8), 291–300.

(148a) No figures are available for the incidence of bovine lungworm disease in Switzerland, but as a result of a series of post-mortems on cattle, mainly from 2 eastern cantons, Krupski & Uehlinger conclude that it must be fairly common. The main part of their paper is taken up with brief clinical and pathological reports on 32 cattle.  
A.E.F.

## 149—Texas State Journal of Medicine.

- a. JOHNSTON, R. A. & ADAM, G. F., 1942.—“Pregnancy complicated by hookworm disease. With report of six cases.” 38 (1), 35–38.

## 150—Tierärztliche Rundschau.

- a. LIEBNITZ, W., 1942.—“Sind die Pferdestrongyliden die Ursache der Mangelkrankheit der Pferde und Fohlen, oder ist verstärkter Strongylidenbefall eine Begleiterscheinung oder gar Folge vorliegender Mangelkrankheit?” 48 (33/34), 279–282; (35/36), 298–301.

(150a) The relationship between avitaminosis and strongylosis in horses has been studied by Liebnitz over a period of 12 years (1929–1941). The conclusion is that avitaminosis is not secondary to a concomitant infection with strongyles, but is a primary disease which favours the spread of the parasites in the host's body. During the period of study over 3,600 horses were treated very successfully with intravenous injections of “Kachexid” (a mineral preparation plus hormones) and intramuscular injections of “Vigantol” (containing vitamin D). Detailed case-histories of 12 of the horses so treated are included. A.E.F.

## 151—Transactions of the Highland and Agricultural Society of Scotland.

- a. ROBERTSON, D., 1942.—“The parasitic worms of sheep in Scotland and their control.” 1942, [Reprint 26 pp.]

(151a) Robertson discusses the importance of helminths in Scottish sheep and gives an account of the life-cycle, pathogenicity and treatment of the more common species. Special attention is given to control measures involving pasture and sheep management. D.O.M.

## 152—Transactions of the Royal Society of South Australia.

- a. JOHNSTON, T. H. & ANGEL, L. M., 1942.—“Larval trematodes from Australian freshwater molluscs. Part VIII.” 66 (1), 50–59.  
 b. JOHNSTON, T. H. & MAWSON, P. M., 1942.—“Nematodes from Australian albatrosses and petrels.” 66 (1), 66–70.  
 c. JOHNSTON, T. H. & MAWSON, P. M., 1942.—“Some avian nematodes from Tailem Bend, South Australia.” 66 (1), 71–73.

(152a) Johnston & Angel record *Cercaria metadena* n.sp. from *Planorbis isingi*, *Amerianna pyramidata* and *A. tenuistriata*; the sporocyst, cercaria and diplostomulum (which occurs in some native fishes) are described in detail. It is suggested that the adult is probably a *Bolbophorus* sp. A.E.F.

(152b) Johnston & Mawson record 11 species of nematodes, 5 of which are new, from Australian albatrosses and petrels. The new species are: *Contracaecum pelagicum* n.sp. from *Diomedea* spp.; *Tetrameres diomedae* n.sp. from *Diomedea chlororhyncha*; *Paryseria diomedae* n. sp. from *Diomedea* spp.; *P. macronektes* n.sp. from *Macronektes giganteus* and *Diomedea chyrosostoma*; and *P. pachyptilae* n.sp. from *Pachyptila vittata*. A.E.F.

(152c) Johnston & Mawson describe 8 species of nematodes from birds at Tailem Bend, South Australia. The following are new: *Echinuria querquedulae* n. sp. from *Querquedula gibberifrons*; *Tetrameres pelecani* n.sp. from *Pelecanus conspicillatus*; and *Leipoanema ellisi* n.g., n.sp. from *Leipoa ocellata*. A.E.F.

## 153—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. DAVIS, G. B., 1942.—“Observations on the facial appearance in cases of bilharziasis.” 36 (2), 117–120.  
 b. CAWSTON, F. G., 1942.—“The diagnosis of bilharziasis in Southern Rhodesia.” [Correspondence.] 36 (2), p. 121.



## 154—United States Naval Medical Bulletin.

- \*a. MAGATH, T. B., 1942.—“The lethal dose of chlorine for cercariae of *Schistosoma mansoni*.” 40, 237–238.
- b. MILLSPAUGH, J. A. & SOMPAYRAC, L. M., 1942.—“Creeping eruption. Infestation with *Ankylostoma braziliense* larvae.” 40 (2), 393–396.

(154b) Creeping eruption due to the larvae of *Ancylostoma braziliense* is incapacitating naval personnel in increasing numbers on the Southeastern Atlantic Seaboard and the Mexican Gulf Coast where the disease is endemic. The clinical symptoms, treatment and prophylaxis are reviewed. A plate illustrates the secondary infection and depigmentation of the skin which may follow excoriation.

R.T.L.

## 155—Veterinary Medicine.

- a. ALLEN, R. W., OLIVIER, L. & PETERSON, H. O., 1942.—“The efficacy of phenothiazine for the removal of the cecal worm of chickens.” 37 (10), 412–415.

(155a) Testing phenothiazine against *Heterakis gallinae* in fowls, Allen et al. gave the following amounts on each of 4 successive days: 0.05 g. to 9, 0.1 g. to 16, and 0.5 g. to 13 fowls. At the heaviest dose only 1 mature worm was found at autopsy in 1 of the 13 fowls, while 492 were expelled in the droppings. Of 48 *Ascaridia galli* in 11 of the fowls, 28 were expelled by the 2 larger doses. No toxic effects were noticed.

B.G.P.

## 156—Veterinary Record.

- a. TAYLOR, E. L., 1942.—“Sub-clinical helminthiasis of farm animals.” 54 (38), 377–380.
- b. BYWATER, H. E., 1942.—“Copper sulphate tolerance of sheep.” 54 (38), p. 380.
- c. LANCASTER, G. C., 1942.—“Treatment of husk.” [Correspondence.] 54 (39), p. 394.
- d. BROWN, G. F., 1942.—“Copper sulphate tolerance of sheep.” [Correspondence.] 54 (39), p. 394.

(156a) Taylor stresses the economic importance of subclinical helminthiasis of farm stock in this country and discusses the factors which bring this about. He maintains that grazing animals are frequently kept at a low nutritional level owing to the variations in the quality and quantity of the herbage and that under such conditions worms increase and cause poor-thriving and stunted growth. The loss to farmers is very considerable and is much more serious than the relatively infrequent outbreaks of acute helminthiasis. Dangerous over-stocking must take place in war-time owing to the reduction in available grazings, and the author strongly urges a closer co-operation between agriculture and veterinary science to meet this danger and thereby save large quantities of meat and milk for the nation. This might be done by the much wider prophylactic use of anthelmintic drugs.

D.O.M.

(156c) Lancaster, writing from Evesham, Worcestershire, states that in that district husk is practically the only parasitic disease which causes death to the host and is the only one for which the farmers ask professional advice. He agrees that the intratracheal injections at present advised are not satisfactory.

R.T.L.

## 157—Zeitschrift für Fleisch- und Milchhygiene.

- a. KOLBE, F., 1942.—“Bemerkenswertes über Trichinen, Trichinose und Trichinenschau.” 52 (24), 269–271.
- b. HESEMANN, 1942.—“Starker Trichinenbefall bei drei Braunbären.” 52 (24), p. 274.

(157a) Kolbe's paper consists of miscellaneous observations on *Trichinella*, chiefly of historical interest, and contains nothing new.

A.E.F.

(157b) Three brown bears from the Düsseldorf Zoo were all found to be heavily infected with *Trichinella*. The bears had shown no signs of illness. Not only the usual predilection sites but the whole of the musculature was involved. The capsules were round, or round to oval, and no calcification was observed. Hessemann considers that rats were the most probable source of infection: he states that the bears had often been observed to pounce on rats.

A.E.F.

## NON-PERIODICAL LITERATURE

- 158—BELDING, D. L., 1942.—“Textbook of clinical parasitology, including laboratory identification and technic.” New York & London, xxi+888 pp.
- 159—WITENBERG, G., 1942.—“Parasitic worms.” Jerusalem, 72 pp. [In Hebrew.]